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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,956	01/15/2002	Keiji Nakayama	218125US2	1536

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EXAMINER

ALLEN, ANDRE J

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 10/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,956

Applicant(s)

NAKAYAMA ET AL.

Examiner

Andre J. Allen

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on The application as filed.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "comprising," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 6, the phrase "and/or" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

With respects to claims 2-3, these claims are intended to be method claims but are not recited in method form, that is they do not cite any steps.

Claim 6 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: it is not clear how the sample mounting hole, indenter, charged particle collecting element, indentation load detector, displacement detector and signal processing system are structurally related/connected.

With respect to claim 5 the recitation "electric potential" is not clear what this element is, also it is not clear why applying an element with different polarities is done.

With respect to claim 10 the recitation "capable of" is ambiguous language and does not clearly define the claimed limitation that is, does this apparatus measure relative displacement or not.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Enomoto in view of [EP]Giannakopoulos et al and Tsukamoto. Enomoto teaches the basic features of the claimed invention for example:

pressing an indenter into a test object {abstract} and detecting charged particles 13 {col. 2 lines 1-10} emitted from a peel starting point or a breakage starting point, specifying a peel occurring time {col 5 lines 15-24} and a fragility breaking time when charged particles are increased, measuring a peel strength and/or a fragility breaking strength {col. Lines 10-20} (claim 1,6)

the test object 12 is formed by a substrate and fragile thin film covering the substrate. (claim 2)

the test object is positioned horizontally and the indenter is vertically pressed into the surface of the test object. {fig. 1}(claim 3).

when charged particles are collected by a charged particle collecting element, an electric potential having a polarity different from that of the charged particles to be collected is applied to the charged particle collecting element {col. 4 lines 15-20}(claim 5)

a sample mounting base 11 (claim 6) an indenter 1 to be pressed into the test object; a charged particle collecting element 13 disposed in the vicinity of the front end portion of the indenter 1 and formed integrally with or independently from the indenter {fig. 1} (claim 6)

the front end portion of the indenter is formed by a diamond, a sapphire or a piezo-electric material {col. 1 line 15}(claim 8)

However Enomoto does not disclose:

an indentation load detector, a displacement detector, a signal processing system, measuring an indentation load as well as an indentation depth and arranging the test object to form a tilt angle with the pressing direction of the indenter so the indenter is pressed in a direction inclined with respect to the surface of the test object and a mounting base changeable between a horizontal state and an inclined state (x,y)

[EP] Giannakopoulos et al discloses a mechanical property tester comprising:

an indentation load detector {p page 4}, a displacement detector 46 {h [age 4} and a signal processing system 74. (claim 6,10)

a mounting base changeable between a horizontal state and an inclined state (x,y) {page 2 line 37}(claim 7)

measuring an indentation load as well as an indentation depth (claim 1,6,9)

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Enomoto with an indentation load detector, a displacement detector, a signal processing system and measuring an indentation load as well as an indentation depth as disclosed by Giannakopoulos et al for the purpose of creating a test material apparatus that operates at optimum performance.

Tsukamoto teaches a material test apparatus comprising:

arranging the test object to form a tilt angle with the pressing direction of the indenter so the indenter is pressed in a direction inclined with respect to the surface of the test object. {fig. 1}10, 1b,1a and 1

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the material test apparatus taught by Enomoto with the function of arranging the test object with the capability of forming a tilt for the purpose of creating a material test apparatus that has more versatility.

Conclusion

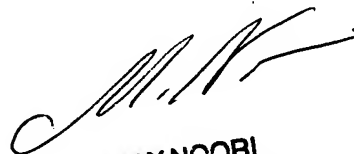
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patents 5999887, 6134954, 6247355 and 6311135 each disclose stress determining apparatus' that teach indentation or property measurements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre J. Allen whose telephone number is 703-3081989. The examiner can normally be reached on mon-fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ben Fuller can be reached on 703-308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-3432 for regular communications and 703-308-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A.J.A
October 7, 2002



MAX NOORI
PRIMARY EXAMINER